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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/771,250	01/26/2001	Syamal K. Ghosh	81871SHS	8127

7590 11/19/2003

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EXAMINER	
FONTAINE, MONICA A	

ART UNIT	PAPER NUMBER
1732	

DATE MAILED: 11/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Ch06

Office Action Summary	Application No.	Applicant(s)	
	09/771,250	GHOSH ET AL.	
	Examiner	Art Unit	
	Monica A Fontaine	1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

This office action is in response to the Amendment filed 2 September 2003.

The following rejections have been withdrawn:

A. 35 USC 103(a) over Scheying et al. (U.S. Patent 6,518,323), in view of Yajima et al. (U.S. Patent 4,141,726): Claims 8-21

The following rejections have been overcome with the Terminal Disclaimer filed 2 September 2003:

A. Double Patenting over U.S. Patent Applications 09/771541 (now U.S. Patent 6,572,810) and 09/770432: Claims 1-21

Drawings

The drawings were received on 2 September 2003. These drawings are acceptable.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 14-16, and 19-21 are rejected under 35 U.S.C. 112, second paragraph, as containing an improper alternative limitation. According to MPEP § 2173.05 (h), alternative expressions are permitted if they present no uncertainty or ambiguity with respect to the question of scope or clarity of the claims. A Markush group is an acceptable form of alternative expression and must contain the phrase "selected from the group consisting of A, B and C." See

Ex parte Markush, 1925 C.D 126 (Comm'r Pat. 1925). Claim 14 contains the incorrect alternative expression "group consisting of Al...or mixtures thereof". Claim 15 contains the incorrect alternative expression "group consisting of "Ni...or mixtures thereof"). Claim 16 contains the incorrect alternative expression "group consisting of ceramics...or mixtures thereof"). Claim 19 contains the incorrect alternative expression "group consisting of oxide ceramics which exhibit a wide variety of colors...". Claim 20 contains the incorrect alternative expression "group consisting of oxide ceramics which exhibit a wide variety of colors...". Claim 21 contains the incorrect alternative expression "group consisting of nitride ceramics which exhibit a wide variety of colors...".

Claim Rejections - 35 USC § 102 and 35 USC § 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-13, 15-17, 19 and 20-21 are rejected under 35 U.S.C. 102(b) as anticipated by Kimura et al. (U.S. Patent 5,326,518) or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kimura et al. (U.S. Patent 5,326,518). Regarding Claim 1, Kimura et al., hereafter "Kimura," show that it is known to carry out a method of making a feedstock for injection molding (Column 4, lines 33-35), comprising the steps of mixing at a temperature of 100-150°C polymeric materials having a thermal conductivity in the range of 0.001 to 0.01 cal/cm-sec-°C wherein the polymeric material is polystyrene and one or more materials is metals in a blended relationship to form a viscous phase mixture (Column 3, lines 52-54; Column 4, lines 4-11), the materials in the viscous phase mixture being selected so that when in a solid phase it has a density greater than 4 grams/cc (Column 6, Table 1), and cooling the blended viscous phase mixture to form the feedstock (Column 4, lines 12-35). Although Kimura does not specifically show a certain thermal conductivity, it is inherent that a mixture with his ingredients would have a thermal conductivity greater than 0.101 cal/cm-sec-°C.

Regarding Claim 2, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process further comprising the step of processing the feedstock by forming pellets from the feedstock which are capable of being placed in an injection molding machine and injection molded to form a solid enclosure body (Column 4, lines 33-35).

Regarding Claim 3, Kimura shows the process as claimed as discussed in the rejection of Claim 2 above, including a process wherein the processing of the feedstock includes extruding the feedstock and cutting the extruded feedstock into pellets (Column 4, lines 33-35).

Regarding Claim 4, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process wherein the polymeric material is polystyrene and the one or more materials are zirconia and gold (Column 3, line 53; Column 4, lines 7-11).

Regarding Claim 5, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process wherein the polymeric material is polystyrene and the one or more materials are titanium carbide and aluminum (Column 3, line 53; Column 4, lines 7-11).

Regarding Claim 6, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process wherein the polymeric material is polystyrene and the one or more materials are silicon carbide and silver (Column 3, line 53; Column 4, lines 7-11).

Regarding Claim 7, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, and although he does not specifically show a certain modulus of elasticity and fracture stress, it is inherent that a mixture with his ingredients would have a modulus of elasticity greater than 32,000 psi and a fracture stress greater than 3,500 psi.

Regarding Claim 15, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process wherein the one or more materials is Ti (a transition element) (Column 4, lines 7-11).

Regarding Claim 16, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process wherein one or more materials is a thermally and electrically insulating oxide (silica: Column 4, lines 7-11).

Regarding Claim 17, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process wherein the ceramic composites are thermally and electrically insulating oxides, including silica (Column 4, lines 7-11).

Regarding Claim 19, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process wherein the one or more materials is an oxide ceramic which exhibits a wide variety of colors, including oxides of transition elements (Column 4, lines 7-11).

Regarding Claim 20, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process wherein one or more materials is an oxide ceramic which exhibits a wide variety of colors, including oxides of rare earth elements (Column 4, lines 7-11).

Regarding Claim 21, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process wherein one or more materials are selected from the group consisting of nitride ceramics which exhibit a wide variety of colors (Column 4, lines 7-11).

Regarding Claim 8, Kimura shows that it is known to carry out a method of making a feedstock for injection molding (Column 4, lines 33-35), comprising the steps of mixing at a temperature of 100-150°C polymeric materials and one or more materials is metals in a blended relationship to form a viscous phase mixture (Column 3, lines 52-54; Column 4, lines 4-11), the materials in the viscous phase mixture being selected so that when in a solid phase it has a density greater than 4 grams/cc (Column 6, Table 1), and cooling the blended viscous phase mixture to form the feedstock (Column 4, lines 12-35). Although Kimura does not specifically show a certain thermal conductivity, it is inherent that a mixture with his ingredients would have a thermal conductivity greater than 0.101 cal/cm-sec-°C.

Regarding Claim 9, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process further comprising the step of processing the feedstock by

forming pellets from the feedstock which are capable of being placed in an injection molding machine and injection molded to form a solid enclosure body (Column 4, lines 33-35).

Regarding Claim 10, Kimura shows the process as claimed as discussed in the rejection of Claim 2 above, including a process wherein the processing of the feedstock includes extruding the feedstock and cutting the extruded feedstock into pellets (Column 4, lines 33-35).

Regarding Claim 11, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process wherein the polymeric material is polystyrene and the one or more materials are zirconia and gold (Column 3, line 53; Column 4, lines 7-11).

Regarding Claim 12, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process wherein the polymeric material is polystyrene and the one or more materials are titanium carbide and aluminum (Column 3, line 53; Column 4, lines 7-11).

Regarding Claim 13, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process wherein the polymeric material is polystyrene and the one or more materials are silicon carbide and silver (Column 3, line 53; Column 4, lines 7-11).

In the alternative, if the claimed thermal conductivity is not inherent in Kimura, Claims 1-13, 15-17, 19 and 20-21 are rejected under 35 U.S.C. 103(a) as obvious over Kimura. Regarding Claim 1, Kimura shows that it is known to carry out a method of making a feedstock for injection molding (Column 4, lines 33-35), comprising the steps of mixing at a temperature of 100-150°C polymeric materials having a thermal conductivity in the range of 0.001 to 0.01 cal/cm-sec-°C wherein the polymeric material is polystyrene and one or more materials is metals in a blended relationship to form a viscous phase mixture (Column 3, lines 52-54; Column 4,

lines 4-11), the materials in the viscous phase mixture being selected so that when in a solid phase it has a density greater than 4 grams/cc (Column 6, Table 1), and cooling the blended viscous phase mixture to form the feedstock (Column 4, lines 12-35). The examiner recognizes that all of the claimed effects and physical properties are not positively stated by the reference. Note however that the reference teaches all of the claimed ingredients, process steps and process conditions and thus, the claimed effects and physical properties would inherently be achieved by carrying out the disclosed process. If it is applicants' position that this would not be the case evidence would need to be presented to support applicants' position. Therefore, although Kimura does not specifically show a certain thermal conductivity, it would have been prima facie obvious that a mixture with Kimura's ingredients would have a thermal conductivity greater than 0.101 cal/cm-sec-°C.

Regarding Claim 2, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process further comprising the step of processing the feedstock by forming pellets from the feedstock which are capable of being placed in an injection molding machine and injection molded to form a solid enclosure body (Column 4, lines 33-35), meeting applicant's claim.

Regarding Claim 3, Kimura shows the process as claimed as discussed in the rejection of Claim 2 above, including a process wherein the processing of the feedstock includes extruding the feedstock and cutting the extruded feedstock into pellets (Column 4, lines 33-35), meeting applicant's claim.

Regarding Claim 4, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process wherein the polymeric material is polystyrene and the one or

more materials are zirconia and gold (Column 3, line 53; Column 4, lines 7-11), meeting applicant's claim.

Regarding Claim 5, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process wherein the polymeric material is polystyrene and the one or more materials are titanium carbide and aluminum (Column 3, line 53; Column 4, lines 7-11), meeting applicant's claim.

Regarding Claim 6, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process wherein the polymeric material is polystyrene and the one or more materials are silicon carbide and silver (Column 3, line 53; Column 4, lines 7-11), meeting applicant's claim.

Regarding Claim 7, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, and although he does not specifically show a certain modulus of elasticity and fracture stress, it is inherent that a mixture with his ingredients would have a modulus of elasticity greater than 32,000 psi and a fracture stress greater than 3,500 psi.

Regarding Claim 15, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process wherein the one or more materials is Ti (a transition element) (Column 4, lines 7-11), meeting applicant's claim.

Regarding Claim 16, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process wherein one or more materials is a thermally and electrically insulating oxide (silica: Column 4, lines 7-11), meeting applicant's claim.

Regarding Claim 17, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process wherein the ceramic composites are thermally and electrically insulating oxides, including silica (Column 4, lines 7-11).

Regarding Claim 19, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process wherein the one or more materials is an oxide ceramic which exhibits a wide variety of colors, including oxides of transition elements (Column 4, lines 7-11), meeting applicant's claim.

Regarding Claim 20, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process wherein one or more materials is an oxide ceramic which exhibits a wide variety of colors, including oxides of rare earth elements (Column 4, lines 7-11), meeting applicant's claim.

Regarding Claim 21, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process wherein one or more materials are selected from the group consisting of nitride ceramics which exhibit a wide variety of colors (Column 4, lines 7-11), meeting applicant's claim.

Regarding Claim 8, Kimura shows that it is known to carry out a method of making a feedstock for injection molding (Column 4, lines 33-35), comprising the steps of mixing at a temperature of 100-150°C polymeric materials and one or more materials is metals in a blended relationship to form a viscous phase mixture (Column 3, lines 52-54; Column 4, lines 4-11), the materials in the viscous phase mixture being selected so that when in a solid phase it has a density greater than 4 grams/cc (Column 6, Table 1), and cooling the blended viscous phase

mixture to form the feedstock (Column 4, lines 12-35). The examiner recognizes that all of the claimed effects and physical properties are not positively stated by the reference. Note however that the reference teaches all of the claimed ingredients, process steps and process conditions and thus, the claimed effects and physical properties would inherently be achieved by carrying out the disclosed process. If it is applicants' position that this would not be the case evidence would need to be presented to support applicants' position. Therefore, although Kimura does not specifically show a certain thermal conductivity, it would have been prima facie obvious that a mixture with Kimura's ingredients would have a thermal conductivity greater than 0.101 cal/cm-sec-°C.

Regarding Claim 9, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process further comprising the step of processing the feedstock by forming pellets from the feedstock which are capable of being placed in an injection molding machine and injection molded to form a solid enclosure body (Column 4, lines 33-35), meeting applicant's claim.

Regarding Claim 10, Kimura shows the process as claimed as discussed in the rejection of Claim 2 above, including a process wherein the processing of the feedstock includes extruding the feedstock and cutting the extruded feedstock into pellets (Column 4, lines 33-35), meeting applicant's claim.

Regarding Claim 11, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process wherein the polymeric material is polystyrene and the one or more materials are zirconia and gold (Column 3, line 53; Column 4, lines 7-11), meeting applicant's claim.

Regarding Claim 12, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process wherein the polymeric material is polystyrene and the one or more materials are titanium carbide and aluminum (Column 3, line 53; Column 4, lines 7-11), meeting applicant's claim.

Regarding Claim 13, Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, including a process wherein the polymeric material is polystyrene and the one or more materials are silicon carbide and silver (Column 3, line 53; Column 4, lines 7-11), meeting applicant's claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura, in view of Taniguchi et al. (U.S. Patent 5,242,872). Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, but does not show using Al, Ti, Mg, or Al-Ti-V. Taniguchi et al., hereafter "Taniguchi," show that it is known to carry out a process of making a blended mixture, in which Mg is an ingredient (Column 8, lines 41-43). Taniguchi and Kimura are combinable because they are concerned with a similar technical field, namely, that of making blended mixtures that are available to be molded. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Taniguchi's Mg as an

ingredient in Kimura's blended mixture in order to obtain a molded article having desired properties of Mg.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura, in view of Scheying et al. (U.S. Patent 6,518,323). Kimura shows the process as claimed as discussed in the rejection of Claim 1 above, but does not show the use of SiC, TiC, B_4C, or WC. Scheying et al., hereafter "Scheying," show that it is known to carry out a process of making a blended mixture wherein silicon carbides are used as ingredients (Column 2, line 67 - Column 3, line 2). Scheying and Kimura are combinable because they are concerned with a similar technical field, namely, that of making blended mixtures that are available to be molded. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Scheying's SiC as an ingredient in Kimura's blended mixture in order to obtain a molded article having good thermal conduction abilities.

Response to Arguments

Applicant's arguments, see Paper No. 4, filed 2 September 2003, with respect to the rejection(s)of claim(s) 8 and 9 under Scheying and Yajima have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Kimura.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica A Fontaine whose telephone number is 703-305-7239. The examiner can normally be reached on Monday-Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Colaianni can be reached on 703-305-5493. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Maf
November 13, 2003

MICHAEL COLAIANNI
PRIMARY EXAMINER

New Phone Number after 12/22/03
571-272-1198